

App. No. 10/590,420
Office Action Dated April 1, 2008

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REMARKS

Favorable reconsideration is respectfully requested in view of the above amendments and following remarks. Claim 1 has been amended. The limitation in claim 1 concerning the content of bismuth oxide is supported by for example previous claim 12 and page 13, lines 9 to 11 of the specification. Claims 11 and 12 have been canceled without prejudice or disclaimer. Claim 19 is new, and is supported for example by page 15, line 20 of the specification. No new matter has been added. Claims 1-6 and 16-19 are pending.

Claim rejections - 35 U.S.C. § 103

Claims 1-6, 11-12 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakui et al. (USP 7,170,674) in view of Hiromi et al. (JP 2002-211950). Applicants respectfully traverse the rejection.

The rejection relies on Hiromi for the use of magnesium oxide in Kakui's composition. Applicants respectfully contend that the rejection's analysis of the references reflects an improper use of hindsight.

More particularly, Kakui teaches a fluorescent glass containing bismuth as an emission species, and discloses adding no more than 0.8 mol%. Kakui also notes in all of their working examples that each of the fluorescent glass samples is expressed from the viewpoint of how much Bi_2O_3 is doped into the matrix composition. Kakui further teaches that where the content of the composition does not include the desired amount of Bi_2O_3 doped into the matrix composition, for example sample A, the desired fluorescence peak cannot be achieved (col. 5, lines 11-37).

On the other hand, Hiromi is directed to a light amplifying glass capable of amplifying light of the S+ and S bands and that is less liable to thermal damage due to excited light. Hiromi teaches that Tm is added into their glass composition (paragraph [0014] of Hiromi). The reference notes that in Tm added light amplifying glass, the light that is amplified, namely the signal light, is ejected along with the excited light, and the light is amplified by utilizing the change in stimulated emission of the Tm (paragraph [0004] of Hiromi). The reference further teaches that Bi_2O_3 is an essential component of their Tm added light amplifying glass, but if the added amount is less than 15%, the light amplification rate decreases and phase splitting occurs (paragraph [0015]).

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Thus, Hiromi teaches that in their Tm added light amplifying glass, Tm is included as an emission species, the bismuth oxide is included to help Tm amplify a signal light, and bismuth oxide should not be less than 15 mol% based on the function of bismuth oxide within their Tm added light amplifying glass.

Given the significant discrepancy in the amounts of Bi₂O₃ in Kakui and Hiromi's compositions and further given that the Bi₂O₃ is not functioning in the same way within the glass compositions of the two references, one would not have been motivated to apply Hiromi to Kakui.

The rejection contends that one would realize that the addition of MgO would positively affect the glass composition and its properties, and would see MgO as a suitable replacement for other divalent metal oxides based on the teachings of Hiromi.

However, there is no experimental work or detailed explanation that would lead one to expect with any reasonable degree of certainty that Hiromi's MgO would be suitable as a replacement in Kakui's composition. As noted above, Kakui in fact teaches that the properties of their glass composition are dependent upon the amount of Bi₂O₃, and given the significant discrepancy in the amounts of Bi₂O₃ in Kakui and Hiromi's compositions, and further given the significant differences in the way the Bi₂O₃ is used in the references, there is no basis to use Hiromi's MgO as a suitable replacement in Kakui's composition. Accordingly, claim 1 and the dependent claims therefrom are patentable over the references.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested. Any questions or concerns regarding this communication can be directed to the attorney-of-record, Douglas P. Mueller, Reg. No. 30,300, at (612) 455.3804.




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Respectfully submitted,

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